

REMARKS

The above amendments and these remarks are responsive to the Final Office action dated March 27, 2006. Claims 1-39 are pending in the application. Claims 11-39 are withdrawn. Claims 1-10 are rejected. Applicants have amended claims 1, 6, and 7. Applicants have cancelled claims 2-5 and 8-10.

Although Applicants suggest the above amendments address the pending rejections and place the application in condition for allowance, in order to facilitate entry of the amendments and consideration of the following remarks, Applicants have submitted a Request for Continued Examination under 37 C.F.R. § 1.114. In view of the above amendments and the following remarks, Applicants request reconsideration of the rejected claims.

Amendments to Claims

The Applicants would like to take this opportunity to amend the claims in order to more particularly claim their invention.

As described in the specification, uv lamps such as xenon lamps or the like typically have low luminous efficiency, and generate significant heat. When such a uv lamp is used in an apparatus for curing adhesive in disc manufacture, the heat from the lamp may distort substrates made from polycarbonate (see paragraph 0007). The presently claimed method addresses this problem by utilizing a plurality of light emitting semiconductor elements to cure the adhesive.

However, by using a plurality of light emitting semiconductor elements instead of a uv lamp, another problem may arise in which irradiation is decreased between neighboring light emitting semiconductor elements. It can therefore be difficult to maintain uniformity of a thickness of the adhesive film.

Applicants' claimed method minimizes the difference or scattering of irradiation from the plurality of light emitting semiconductor elements. The uniformity of the thickness of the adhesive film is therefore maintained because "light from adjacent, surrounding light emitting diodes overlaps" (see paragraph 0096).

The subject matter of claims 4 and 8 have been included in amended claim 1. Applicants suggest that the amendment to claim 1 is fully supported by the specification. See, for example, "This embodiment will be described with reference to FIG. 7. ... A plurality of light emitting diodes 7a is arranged at high density..." at paragraph 0104 of the specification.

Rejections under 35 USC § 103

Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maenza (U.S. Patent 5,968,305) in view of Young (U.S. Patent 6,561,640).

The Examiner suggests that it would have been obvious Maenza to one of ordinary skill in the art at the time the invention was made to apply ultraviolet light from a narrowband UV light source as taught by Young using any of the well-known and functionally equivalent narrowband UV light sources known in the art including laser,

LED, etc. as only the expected results would be achieved. Applicants respectfully disagree and suggest the Examiner has failed to establish the *prima facie* obviousness of the rejected claims.

The Examiner has suggested that "Maenza teaches a narrowband uv light source is preferable to a wideband uv light source (Column 1, lines 48-56)" and that "Young discloses uv light curable adhesive using a narrowband uv light source ... including laser, LED, etc". The Applicants respectfully disagree with the Examiner's characterization of the teaching of the references.

In particular, Maenza states that "wideband light sources are difficult to spectrally control and generate large amounts of infrared ("IR") energy" (col. 1, lines 50-52). Maenza therefore provides a recognition that it is difficult to utilize a wideband light sources. However, while Maenza articulates the problem, the solution of Maenza is the use of a uv laser. The use of a uv laser is consistent throughout the Maenza disclosure, and is in fact referenced even in the title of the Maenza patent. The Maenza reference fails to disclose or suggest the use of multiple light emitting semiconductor elements arranged at high density, as recited in claim 1, and fails to suggest the use of any other uv source other than a uv laser.

The Young reference relates to printing technology (Title of Invention, Column 1, lines 12-28) and is in a different field of technology from the present invention. Young clearly states that the problems to be solved (see Col. 1, lines 50-63) include "undesired liquid puddles" by using "ink jet applications". One of ordinary skill in the art of

preparing multi-layered optical recording mediums according to Maenza would not be led to the Young reference, as it represents non-analogous art with respect to Maenza. Therefore there is no motivation to combine Maenza and Young as suggested by the Examiner.

Additionally, replacing the uv laser of Maenza with a plurality of light emitting semiconductor elements would change the principle of operation of Maenza (that of utilizing a uv laser), therefore there can be no suggestion or motivation to modify Maenza as suggested by the Examiner (MPEP § 2143.01).

The Maenza reference relates to preparation of disc substrates while Young relates to printing. The Young reference fails to disclose or suggest a disc substrate, while Maenza fails to disclose or suggest a printing technique. For all the reasons provided above, Applicants suggest that there can be no motivation to combine the Maenza and Young references, as suggested by the Examiner, and that therefore the Examiner has failed to establish the *prima facie* obviousness of claim 1.

For at least the reasons provided above, Applicants respectfully request the withdrawal of the rejection of claim 1 under 35 U.S.C. § 103(a). With respect to claim 5, without acknowledging the propriety of the rejection of claim 5, Applicants suggest that as claim 5 has been cancelled, the rejection of that claim under 35 U.S.C. § 103(a) has been rendered moot.

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maenza and Young as applied to claims 1 and 5 above, and further in view of Tokuda et

al. (U.S. Patent 6,294,239). The Examiner suggests that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the uv-curable adhesive in Maenza as modified by Young any well known and conventional uv-curable adhesive for bonding two disc substrates, such as that shown for example by Tokuda et al.

Without acknowledging the propriety of the rejection, Applicants suggest that as claims 2 and 3 have been cancelled, the rejection of those claims under 35 U.S.C. § 103(a) has been rendered moot.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maenza and Young as applied to claims 1 and 5 above, and further in view of Anzai et al. (U.S. Patent 6,485,808). Applicants note that the subject matter of claim 4 has been added to claim 1, and claim 4 has been cancelled.

In particular, the Examiner suggests that it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine the distance of the uv light source from the disc substrate in Maenza as modified by Young as a function of the intensity of the uv light source, the time the uv light source is applied, etc. as doing so would have required nothing more than ordinary skill and routine experimentation.

As set out at MPEP § 2143.01(IV), merely the fact that the claimed invention is within the capabilities of one of ordinary skill is not sufficient to establish *prima facie*

obviousness, without an objective reason to combine the teachings of the references. As discussed above, Applicants respectfully suggest the Examiner has failed to establish a motivation or suggestion to combine the Maenza and Young references. Therefore, the Examiner has not established a motivation or suggestion to combine Maenza, Young and Anzai.

Anzai et al. relates to a technique of reforming a surface of a disc substrate and discloses the smoothing of fine irregularities generated on the surface of the disc substrate by uv-irradiation of the surface of polycarbonate. While the distance in this process is 10 mm, the Anzai et al. reference is not directed at curing an adhesive between disc substrates. Therefore, although the reference teaches a distance of 10 mm for smoothing the surface of the disc, the reference fails to render it obvious to use a distance of 10 mm for curing the adhesive between the disc substrates.

In view of the above remarks and amendments, Applicants respectfully request the withdrawal of the rejections of the claims under 35 U.S.C. § 103.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maenza and Young as applied to claims 1 and 5 above, and further in view of Amo et al. (U.S. Patent 5,779,855). The Examiner suggests that it would have been obvious to one of ordinary skill in the art at the time the invention was made to include in Maenza as modified by Young the application of uv light to the edges of the disc substrates, the better to cure the adhesive along the edges, as was well known in the art as shown by Amo et al.

Applicants respectfully disagree.

Amo discloses irradiation of ultraviolet reflected by a reflecting member 3A so that "the peripheral end portion of the optical disc" is cured. In contrast, the present application discloses that "since the semiconductor light emitting unit 7 is larger than the outer circumferences of the substrates 1 and 2 by one light emitting semiconductor element, it is also possible to cure adhesive protruding between the outer edges of the substrates 1 and 2". The Amo reference fails to disclose or suggest the curing of "adhesive protruding between the outer edges of the substrates".

Applicants suggest that the cited references, alone or in combination, fail to disclose each and every element of claim 6, and that therefore claim 6 is not rendered *prima facie* obvious by the cited references.

Furthermore, as discussed above, the Applicants suggest that the combination of Maenza and Young is improper, and that therefore, the combination of Maenza, Young and Amo is improper.

For at least these reasons, Applicants respectfully request the withdrawal of the rejection of claim 6 under 35 U.S.C. § 103.

Claims 7, 8, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maenza and Young as applied to claims 1 and 5 above, and further in view of Ohno et al. (U.S. Patent 6,613,170). The Examiner suggests that it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the uv light of

Maenza as modified by Young using the technique suggested by Ohno et al. to form the adhesive layer with an even thickness. Applicants respectfully disagree.

As discussed above, Applicants suggest that the combination of Maenza and Young is improper, therefore, the combination of Maenza, Young and Ohno is similarly improper, and cannot be relied upon to establish *prima facie* obviousness under 35 U.S.C. § 103.

With particular respect to claim 8, the Examiner suggests that the Ohno et al reference discloses rotating the disc substrates at a high speed. However, Ohno fails to disclose irradiating the disc substrates with ultraviolet light while the disc substrates are rotated slowly after rotating at a high speed to spread the adhesive, as presently claimed in claim 1. Specifically, Ohno et al. teaches irradiation of the substrates while they are rotated at high speed to spread the adhesive, followed by irradiation of the disc substrates after they are stopped. Applicants suggest that the cited references fail to disclose each and every element of the claims, as amended.

In addition, Ohno et al. fails to provide a motivation for rotating the substrates while the adhesive is fully cured. As discussed at paragraph 0103 of the instant specification, "ultraviolet light may be radiated onto the substrates 10 while the substrates are stopped. However, in order to achieve uniformity of the amount of ultraviolet light irradiation, it is preferable to radiate ultraviolet light while rotating the substrates 10 at low speed".

With particular respect to claim 10, Applicants note that claim 10 has been

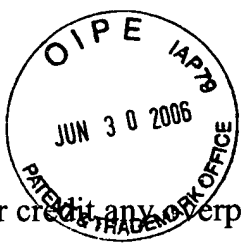
cancelled, and that therefore the rejection of that claim has been rendered moot. In view of the above remarks and amendments, Applicants respectfully request the withdrawal of the rejections of the claims under 35 U.S.C. § 103.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maenza, Young, and Amo et al. as applied to claim 6 above, and further in view of Vromans et al. (U.S. Patent 6,108,933). In particular, the Examiner suggests that it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the uv light to the edges of the disc substrate in Maenza as modified by Young and Amo et al. in an atmosphere where the oxygen concentration is lower than in air to prevent the radicals formed during curing from being destroyed by oxygen as was well known in the art and shown for example by Vromans et al.

Without acknowledging the propriety of the rejection, Applicants suggest that as claim 9 has been cancelled, the rejection of that claim under 35 U.S.C. § 103(a) has been rendered moot.

It is believed that the subject patent application has been placed in condition for allowance, and such action is respectfully requested. If the Examiner has any questions or concerns, or if a telephone interview would in any way advance prosecution of the application, please contact the undersigned agent of record.

The Commissioner is hereby authorized to charge any additional fees which may



be required, or credit any overpayment to Deposit Account No. 11-1540.

CERTIFICATE OF MAILING

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